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A NEW  
**TREATISE**  
ON THE  
**DISEASES**  
OF THE  
**Chryftalline Humour**  
OF A  
**HUMAN EYE:**  
Or, of the  
**Cataract and Glaucoma.**

WITH A  
New Theory of their CAUSES, and an Endeavour to demonstrate that there are no membranous Cataracts; but that all Cataracts are from an Alteration of the chryftalline Humour itself.

WITH  
An exact Description of a new and more successful Method of making the Operations necessary to the Removal of the several Species of these Diseases.

*Humbly address'd to Her MAJESTY.*

To which is prefix'd,  
**A LETTER to the PHYSICIANS and SURGEONS of London and Westminster.**

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*Qui dat videre, dat vivere. Cic.*

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By **JOHN TAYLOR, M. D. Oculist,**  
FELLOW of the College of Physicians of  
*Basle in Swisserland*, of the Imperial Academy  
of *Cologn in Germany*, and of the Society of  
*Leige and Rheims.*

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**L O N D O N:**  
Printed for **JAMES ROBERTS**, near the *Oxford-Arms*  
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THE  
DISPATCH  
OF  
HUMANITY  
AND  
THE  
FUTURE  
OF  
THE  
HUMAN  
RACE

THE  
FUTURE  
OF  
THE  
HUMAN  
RACE





TO THE  
QUEEN.

MADAM,

**T**HE great Advantage of  
a perfect Enjoyment of  
Sight, and the deplora-  
ble Condition of the  
Blind, are so obvious, that I need not

A 2

make

#### iv DEDICATION.

make an Apology for writing a Treatise on this Subject, since nothing of the Kind has yet appear'd in our Language worthy the least Notice. And I am so much the more encourag'd to publish it, that I have the Honour to lay it at your MAJESTY'S Feet, who are as capable of judging of its Solidity and Merit, as You are inclin'd to encourage ARTS and SCIENCES; and whose great Discernment in all Things is equal to those eminent Virtues which have made You the Glory of Your Sex, have added Lustre to Majesty, and inwardly adorn'd the Splendor of an outward Crown.

The Honour, MADAM, which I  
have had to attend Your MAJESTY,  
and



## DEDICATION. V

and the gracious Attention You were pleas'd to favour me with in what I was allow'd to lay before You, permits me to hope that this WORK will have the good Fortune of proving acceptable to Your MAJESTY.

It would, MADAM, be the greatest Presumption in me to undertake to celebrate Your MAJESTY's Praises, conscious as I am that I could never rise up to the Grandeur of the Subject; and therefore it better becomes me to admire with a respectful Silence those amiable Qualities that have gain'd Your MAJESTY the Esteem and Affection of Your People at Home, and made You the Envy

vi DEDICATION.

and Wonder of the politest Nations  
abroad.

*I am,*

M A D A M,

*With the greatest*

*Respect and Submission,*

*Your* M A J E S T Y 's

*most humble and most dutiful*

*Subject and Servant,*

JOHN TAYLOR.



TO THE  
P H Y S I C I A N S  
AND  
S U R G E O N S  
OF

*London and Westminster.*

GENTLEMEN,



*F all the Senses, that of Seeing is allow'd to be most useful; yet 'tis a general receiv'd Opinion, that the Organ destin'd to serve to that noble End, is more exposed to Dangers, more liable to Infirmities and Diseases than any other; and that such Diseases are with more Difficulty*

ij      *To the P H Y S I C I A N S*

*removed. This, indeed, seems to reflect upon the Conduct of Nature, who has always best guarded those Parts, which are of greatest Use: But I believe the Objection may be soon answer'd, and Nature be found here in no wise to differ from her ordinary Method of acting; if we consider what little Attention has been given to this Branch of Knowledge, and how few have engaged in its Practice.*

*There is no Doubt but the Cause of this Ignorance arises from the great Nicety that attends its Study, and the little Success that has flow'd from its Practice; if, therefore, from the following Sheets, it may appear I have apply'd myself with more Diligence to the former; or if the Success which I have met with in the latter may be every Day known; I question not, but these will be sufficient Motives to recommend this Piece to your Perusal; and of this I am the more persuaded, because I apprehend, you, who are particularly distinguish'd in the learned World from your Superior Judgment in Physick, can't but be well pleas'd with any Industry, that may be conducive to the improving this most useful, and perhaps only Part, which has been hitherto least known.*

*Whatever may have been thought of the Method I have taken towards the Advancement of this Science, may be needless  
to*

to mention; but I must beg Leave to observe thus much in my Favour, that the late tedious Progress I have taken, which I find has given to some a Cause of Objection, has been the only Means and Foundation of my Knowledge and Improvement, as it has furnish'd me with an Opportunity of making my Remarks upon a greater Number of Subjects, in a few Years, than the whole Series of my Life, in a settled Way, could possibly have afforded me.

I wou'd be here understood, that from the many Experiments I have made during the uninterrupted Course of Eight Years (the Time I was on this Progress) I have been furnish'd with those Lights which have enabled me to form a more certain and extensive Theory than my Predecessors could pretend to, or my Contemporaries can boast of. And surely it must be granted, that in all Sciences, that which is supported by a Number of incontestible Facts, is preferable to that which is only founded upon a precarious, and often chimerical Hypothesis: Therefore, Gentlemen, I hope, what I have the Honour to present you, will be read and examin'd, without the least Regard to any private Ends, but purely in the View of rendring Service to the Publick.

Not



iv To the P H Y S I C I A N S

Not to mention that Variety of Diseases, for the Cure of which we have hitherto had no true Method proposed, and which I have endeavour'd to remedy, by a more easy and secure Way than has yet been found out; that of the Cataract, as being more general, is, for that Reason, more worthy of Remark; especially if we consider that it has been thought necessary to expose the Patient to wait sometimes many Years in a very miserable State, for the Maturity of it; in hopes of Success from an Operation which has always been acknowledg'd dangerous, and so very uncertain, by the ordinary Methods, that 'tis even hard to conceive why it should not rather totally destroy the Sight, than prove a Means of its Recovery.

If it shall appear from the Success some of you have seen, and the Account here given of the Manner of my removing these Disorders, that I am the first who have discover'd the Means to avoid that painful Delay of a Cataract's Maturity, and to remove the several Species of it with less Danger, I hope you will think me worthy your Esteem, as well as that of the Publick.

*The Gutta Serena has been hitherto generally judged Incurable; but if it is evident from my Practice, and in the Progress of this Work, that I have been so happy as to find out a Way of removing several Species of it, I hope, since I explain the Methods, and pretend to no Secret, there will be nothing in this Case that savours of Presumption.*

*It may not, perhaps, be amiss to observe here, that it has ever been a Custom with the profess'd Oculists of all Nations, to make a Secret of their Practice, and to refuse to communicate to any one a Share of that Knowledge they possess'd. For my Part, I declare publickly my Design of acting in a different Manner, and am so far from desiring to conceal my Practice, that I shall ever use my utmost Endeavours to make it more diffusive and universal.*

*I am far from affirming, that I have a compleat Knowledge of all the Diseases of the Eye; and own there are many Things I am unacquainted with: But it may be sufficient here to recommend my Practice and Theory to the Judgment of You, who, from your Education, can be no Strangers to the Subject; and I shall beg Leave to finish with this Reflection, That whatever Fate attends this Work,*  
*I know*

vj To the PHYSICIANS, &c.

*I know no Enemies amongst you, except  
those who sacrifice more to Mammon than  
Reason.*

I am,

GENTLEMEN,

Your Obedient,

Humble Servant,

Suffolk-Street, Dec. 21.

1735.

JOHN TAYLOR.



ON THE  
DISEASES  
OF THE  
Chrystalline HUMOUR.



CHAP. I.

*Of the CATARACT in general.*



HAT the *Greeks* call *Hypochy-  
ma*, and the *Latins*, *Suffusio*,  
is one and the same Disease,  
known by the Name of *Cata-  
ract*.

Authors are not agreed about the Nature  
of a Cataract; some pretend that it is a Sub-  
stance of a membranous Appearance, form-  
ed from a diseas'd Alteration of the aqueous  
Humour; others, that it is a Substance of a  
membranous Appearance form'd from Pus,

B

separated

## 2 *A New Treatise on the Diseases*

separated by a Loss of Continuity of the Vessels of the *Uvea*; and others on the contrary assert, that there are no membranous Cataracts, but that all Cataracts are an Alteration of the chrystalline Humour itself.

They who believe that a Cataract is a Substance of a membranous Appearance from a diseas'd Alteration of the aqueous Humour, tell us, That when any impure Particles are emitted into the aqueous Humour of an improper Quality, Figure, or Magnitude, to pass on in the usual Circulation; they continue moving about this Humour, till by their Levity or Viscidity they assemble together behind the Pupil, and by degrees obtain the Consistence and Opacity of a Pellicle or Membrane.

If we consider the Situation and different Quantity of the aqueous Humour in the two Chambers of the Eye, with the manner of its Supplies, we shall be encourag'd to believe that such a Substance of a membranous Appearance would rather form itself in the anterior than in the posterior Chamber; and since we have no Instance of a Cataract being form'd in the anterior Chamber, we may very reasonably conclude that no Cataract can be form'd from any diseas'd Alteration of the aqueous Humour.

They who believe that a Cataract is a Substance of a membranous Appearance form'd from Pus, separated by a Loss of Continuity  
2 of



*of the Chryſtalline Humour.* 3

of the Veſſels of the *Uvea*, tell us, That the obſtructed Veſſels of the *Uvea* in an Inflammation, emit a whitish *Pus* into the poſterior Chamber of the aqueous, which by its Viſcidities adheres to the Circumference of the Pupil, and forms a membranous Cataract.

Experience daily proves the Error of this Hypotheſis; for if we obſerve the different Poſitions of a Cataract in the ſeveral Degrees of its Progreſs, we ſhall perceive that it begins in the Seat of the Chryſtalline, and as its Opacity increaſes, it appears to riſe towards the Center of the Pupil, and that in its laſt State it admits Light to paſs between the Capsula of the Chryſtalline and inner Edge of the Pupil, in a ſufficient Quantity to diſcover Shades of Objects.

Whereas if a Cataract adhered to the inner Edge of the Pupil in all or part of its Circumference, it would not only proportionally hinder the Light from paſſing to the immediate Organ of Sight, but ſtop the free Motions of the *Iris*; and if we ſuppoſe from the Softneſs of its Texture it would not ſtop the Motions of the *Iris*, we muſt allow ſome Change in its Figure, depending on ſuch Motions; and ſince Experience makes it evident that the Cataract maintains very nearly, if not exactly, the Figure of the healthful Chryſtalline in every State of this Diſeaſe, we may very reaſonably conclude

#### 4 *A New Treatise on the Diseases*

that no Cataract can be form'd from Pus, separated by a Loss of Continuity of the Vessels of the *Uvea*.

They who maintain that a Cataract is an Alteration of the ChrySTALLINE Humour, have proved it by such a vast Variety of unquestionable Experiments, that I think (in the Time I write) 'tis a generally receiv'd Opinion. I shall therefore only endeavour to demonstrate that there are no membranous Cataracts, but that all Cataracts are an Alteration of the chrySTALLINE Humour itself.

The Question is then, Whether there are membranous Cataracts? Or whether all Cataracts are an Alteration of the chrySTALLINE Humour?

Messieurs *Hecquet* (a), *Woolhouse* (b), *St. Yves* (c), *Hovius* (d), *Morand* (e), *Geisler* (f),  
*Gastaldi*

(a) 1. Remarques sur l'utilité de la saignée dans les maladies des yeux.

2. Sa Lettre sur les maladies des yeux pour expliquer ce qui en a été dit dans ses remarques sur l'utilité de la saignée dans les maladies des yeux.

(b) 1. Ses Dissertations sçavantes & Critiques sur la Cataracte & le Glaucome.

2. Ses Observations sur le Memoire Academique de *Monf. Morand*.

3. Son Memoire dans le Journal des Sçavans, *Decembre*, 1720.

(c) 1. Son Traité des maladies des yeux, p. 239.

2. Reponse à une Lettre Critique de son Traité des maladies des yeux.

(d) De circulari humorum motu in oculis, p. 86.

(e) Ses Observations sur la Cataracte dans l'histoire de L'Academie Royale des Sciences, l'année 1722.

(f) Sa Lettre écrite de *Nuremberg* sur la Cataracte.

*of the Chryſtalline Humour.* 5

*Gaſtaldi (g)*, *Dedier (h)*, *Pinſon (i)*, *Dubois (k)*, *Frytag (l)*, with many others, maintain both theſe Opinions, and aſſert, that there are membranous Cataracts, but that they are not ſo common as thoſe from an Alteration of the Chryſtalline.

On the contrary, *Meſſieurs Heiſter (a)*, *Maitre-Jan (b)*, *Briffeau (c)*, *Petit (d)*, with many others, maintain that there are no membranous Cataracts, but that all Cataracts are from an Alteration of the chryſtalline Humour.

B 3

After

(g) *Queſtio Medico-Chirurgica, &c. ſub hac verborum ſerie, an Cataracta à vitio humoris aquei aut cryſtallini oriatur, &c.*

(h) *Sa Lettre écrite à Mr. Woolbouſe, &c. Vid. Journal des Sçavans pour le mois de Juillet, 1722.*

(i) *Ses Observations ſur la Cataracte & le Glaucome.*

(k) *Suite des Maladies Chroniques V. 5.*

(l) *Diſſertatio Medica de Cataracta, &c.*

(a) 1. *De Cataracta, Glaucomate, & amauroſi Tractatio, &c.*

2. *Apologia & uberius explicatio ſyſtematis ſui de Cataracta, Glaucomate, & amauroſi, contra Wolbuſii ocularii Pariſienſis cavillationes & objectiones, itemque Pariſienſis Eruditor, &c.*

3. *Vindiciæ ſententiæ ſuæ de Cataracta, Glaucomate, & amauroſi, &c.*

(b) *Traité des Maladies de l'Oeil.*

(c) *Traité de la Cataracte & du Glaucoma.*

(d) 1. *Sa Lettre dans laquelle il démontre que le Criſtallin eſt fort près de L'uvéé, &c.*

2. *Sa Lettre contenant des réflexions ſur ce que M. Hecquet a dit dans ſes Remarques ſur l'utilité de la ſaignée dans les maladies des yeux.*

3. *Sur les deux eſpaces que l'humeur aqueuſe occupe dans l'oeil & ſur le Criſtallin & la Cataracte. V. Hiſtoire de l'Academie Royale des Sciences pour l'année 1722, 23, 25, 28, 30.*

## 6 *A New Treatise on the Diseases*

After having propos'd some Objections against the Sentiments of those who favour the Existence of a membranous Cataract; in order to determine this Question, I shall enquire into the exact Situation of the ChrySTALLINE, the true Depth or Thickness of the Chambers of the aqueous Humour, and the Consequences that must attend the Removal of this supposed membranous Cataract from the posterior Chamber.

The celebrated *Dr. Petit* greatly favours the Opinion which maintains that all Cataracts are from an Alteration of the chrySTALLINE Humour, as appears in several of the Memoirs of the Royal Academy of *Paris*; and he supports this Opinion chiefly from his having proved by the following Experiment the exact Situation of the ChrySTALLINE, and Thickness of the Chambers of the aqueous Humour.

He separated a human Eye from its Fat and Muscles, and in that Situation it weighed 147 Grains and a half, and its Axis was 11 Lines one Third of Length; this Eye was a little flat on its Sides, under the strait Muscles, which made four irregular obtuse Angles; it had 11 Lines one quarter, measur'd by two of its opposite flat Sides, from the Right to the Left, and 10 Lines one quarter by two of its opposite flat Sides, from the superior to the inferior Parts.

The



*of the Chryſtalline Humour.* 7

The *Cornea* made by its Convexity the Portion of a Sphere of ſeven Lines and a half Diameter; the *Uvea* had five Lines of Diameter meafur'd from the exterior Part of the *Cornea*. But five Lines and a half when meafur'd from the interior Part of the *Cornea*, where the *Cornea* grows wider, by reaſon of its Inclination.

The Pupil had one Line and a half of Diameter, this was remarked after the Removal of the *Cornea*, which had the Thickneſs of  $\frac{1}{12}$  of a Line. The *Cornea* and aqueous Humour being removed, he took away with a fine Sponge, all that remain'd of the aqueous Humour about the Surface of the Capsula of the Chryſtalline.—He weigh'd this Eye, and found leſs Weight by five Grains, which was the Weight of the aqueous Humour this Eye contain'd.—He then meafur'd the Axis of the Eye, and found it nine Lines  $\frac{2}{3}$ , that is, one Line  $\frac{2}{3}$  from the moſt prominent Part of the *Cornea*, to that of the Capsula of the Chryſtalline; from which, if we allow  $\frac{1}{12}$  for the Thickneſs of the *Cornea*, the Thickneſs of the aqueous Chambers will be exactly one Line  $\frac{1}{2}$ .

The Chryſtalline formed by its anterior Part a Portion of a Sphere, of nine Lines in Diameter; it had four Lines  $\frac{1}{2}$  in Bigneſs, and two Lines  $\frac{1}{4}$  in Thickneſs; the Height of its Segment, had a little more than  $\frac{1}{3}$  of a Line.



## 8 *A New Treatise on the Diseases*

The Chryſtalline was incloſed in a transparent Capsula, continued from the Hyaloyde Membrane, to the *Ligamentum & processus ciliares*. This Capsula confin'd the Chryſtalline in the Cavity of the Vitreous Humour; it did not adhere to any Part of the Chryſtalline, but was (as it always is) moistened with a little quantity of Liquor.—The Chryſtalline weighed four Grains  $\frac{1}{4}$ .

The vitreous Humour which fill'd all the rest of the Eye, weigh'd ten Grains.—The Membranes weigh'd thirty-four Grains. If we put together the Weight of each of these Parts, the Total will be 147 Grains and a half for this Globe of the Eye.

There are several other ways of knowing the true Situation of the Chryſtalline, and Thickness of the aqueous Chambers. If we make an Opening into the right Side of the Globe, with the Point of a Lancet, about three Lines below the Edge of the *Cornea*, and another in the opposite Side, exactly at the same Distance from the *Cornea*; if after having enter'd a Needle at one of these Openings, and pass'd it in a direct Line thro' the other, we cut round the *Sclerotis* immediately below the *Cornea*, remove the *Uvea*, open the Capsula of the Chryſtalline, and take the Chryſtalline from its Seat, we shall perceive that the Needle has pass'd the posterior Part of the Chryſtalline, without having touch'd the Chryſtalline in its Passage.

of the ChrySTALLINE Humour. 9

If also we make an Opening into the right Side of the Globe, with the Point of a Lancet, about  $\frac{2}{3}$  of a Line below the Edge of the *Cornea*, and another in the opposite Side, exactly at the same Distance from the *Cornea*; if after having enter'd at one of these Openings a small *plano*-Convex Needle, with its plain Surface directed towards the fund of the Globe, and pass'd it, in a direct Line, through the other, we cut round the *Sclerotis*, immediately below the *Cornea*, and remove the *Uvea*, we shall perceive the plain Surface of the Needle immediately placed on the anterior Surface of the Capsula of the ChrySTALLINE,

And we may determine with great Exactness, the Thickness of the aqueous Chambers, by examining with Attention the Origine, and Insertion of the *Ligamentum ciliare*, and remembering that this Ligament never exceeds  $\frac{1}{4}$  of a Line in Length.

By these Experiments, we learn the impossibility of removing this supposed membranous Cataract from the posterior Chamber of the Aqueous, without violently breaking or separating the *Ligamentum ciliare* from its Adhesion to the Capsula of the ChrySTALLINE.

And by these Experiments we learn, that if to avoid breaking or separating the *Ligamentum ciliare*, in an Endeavour to remove  
this

10 *A New Treatise on the Diseases*

this supposed membranous Cataract, we should pass the Needle into the aqueous Chamber, by directing its Point from below its Insertion, to the Capsula of the ChrySTALLINE, we must make such an Opening into the posterior and anterior Parts of this Capsula, as to render it incapable to continue the ChrySTALLINE in its healthful Seat. — Thus the ChrySTALLINE being no longer confined in its Capsula, would leave its Situation in the *Vitreous*, and fall on the *Uvea*.

But even this Care is never taken by those who favour the Existence of a Membranous Cataract; for by what I have seen, and by all the Accounts that have come to my Knowledge, the Operation which has ever been universally practised, consists only in passing a Needle a little behind the *Cornea*, and directing it to the superior Part of the Cataract, and afterwards in endeavouring to place the Cataract a little below the inferior and inner Surface of the *Uvea*. Thus from the above Experiments it appears, That the Needle must act as much in the Seat of the ChrySTALLINE, as in the aqueous Chamber, and consequently must act as much on the ChrySTALLINE, as in this supposed Membrane.

And suppose the Needle was enter'd into the Posterior Chamber of the aqueous, without wounding the *Ligamentum ciliare*, or Capsula of the ChrySTALLINE, it will be very difficult to conceive how a Needle of  $\frac{1}{4}$  of a Line in its Diameter, should move  
in

*of the Chryſtalline Humour.*    I I

in that Chamber; much leſs that it ſhou'd change its Situation, in a manner neceſſary to the Removal of this ſuppoſed membranous Cataract; ſince it appears by the moſt exact Enquiry, that the Thickneſs of the poſterior Chamber of the aqueous never exceeds  $\frac{1}{4}$  of a Line, when the aqueous Humour, ( which is at this Time diſcharged ) is contained in it.

From what I have ſaid it appears, that thoſe who favour the Exiſtence of a membranous Cataract, muſt not only neceſſarily admit of a different manner of removing it, from that of a diſeaſed Chryſtalline, but alſo have ſome certain way of knowing the one from the other. — For if before the Operation they ſhould judge it a Cataract, from an Alteration of the Chryſtalline, when it was a Membrane in the poſterior Chamber of the aqueous: By endeavouring to remove this Cataract, they muſt effectually deſtroy the healthful Chryſtalline, by forcing it through its Capsula, or forcing it with its Capsula, from the *Ligamentum ciliare*. And, ſuppoſe, during the Progreſs of ſuch an Operation, they find their Miſtake, and immediately return their Needle into the ſuperior Part of the poſterior Chamber of the aqueous, in order to remove this ſuppoſed Membrane, it would be impoſſible for them, ( as I have already obſerved ) to paſs the Needle into that Seat of the aqueous, without violently breaking or ſeparating

ting



## 12 *A New Treatise on the Diseases*

ting the *Ligamentum ciliare* from its Adhesion to the Capsula of the ChrySTALLINE; and the aqueous Humour being discharged, the ChrySTALLINE, with its Capsula, must necessarily fall on this supposed Membrane, and force it so irregularly on the *Uvea*, that no Endeavours could remove it, without destroying the Uses of the ChrySTALLINE, and exposing the Patient to great Danger.

Thus they would not only be effectually disappointed of any immediate Success, but in all Probability occasion an irrecoverable Loss of Sight.

And if before the Operation, they should judge it a Cataract, from an Alteration in the posterior Chamber of the Aqueous, when it was a diseased ChrySTALLINE; by endeavouring to remove this Cataract, they must so change the healthful Situation of the diseas'd ChrySTALLINE, or force it through its Capsula on the *Uvea*; that on finding their Mistake, it would be impossible for them to depress this alter'd ChrySTALLINE, without exposing the Patient to the utmost Danger.

And if it appear'd that they had any certain Signs of knowing this Membranous Cataract, from that of a diseased ChrySTALLINE. The Situation of the ChrySTALLINE, its Capsula and *Ligamentum ciliare*. — The Smallness of the posterior Chamber of the Aqueous. — The Impossibility of moving  
a Nec-



a Needle in that Chamber, of a proper Diameter, to remove such a Membrane. — The Injury that would probably attend the *Uvea*, in the Progress of the Operation from the Discharge of the aqueous Humour. — The wounding or forcibly separating the Parts of the *Ligamentum ciliare*, and the Change that must necessarily happen in the Situation of the ChrySTALLINE, sufficiently prove that Sight could never be restor'd by any Operation possible to be attempted to remove this suppos'd Membrane; but on the contrary, every such Attempt must bring on the most dangerous Consequences.

By this way of Reasoning I was at first inclined to believe, that all Cataracts were from an Alteration of the ChrySTALLINE; and was afterwards strengthened in my Opinion, from the vast Number of Errors in the Sentiments of those who favour the Existence of a membranous Cataract. And my Opinion receiv'd further Support, from having never found any Alteration in the posterior Chamber of the Aqueous, that had the least Analogy to the Account we have of a Membranous Cataract; but have always remarked in examining the Pupil, from the first Appearances of every Species of this Disease, Degrees of Whiteness, and Opacity in the Seat of the ChrySTALLINE; and that in the Progress of their Symptoms, this Whiteness  
and

#### 14 *A New Treatise on the Diseases*

and Opacity has always continued in that Seat, advancing towards the Center of the Pupil, and maintaining nearly, if not exactly, the Figure of a healthful ChrySTALLINE.

Besides, if a Cataract could be formed by any Alteration in the posterior Chamber of the Aqueous, I might reasonably have expected to have seen one Instance in such a vast Number of Disorders of this Kind, which have presented to my Care; and I must of Necessity have known it from that of a diseas'd ChrySTALLINE, from its Figure, Situation, and Opacity, consider'd from the Make of the posterior Chamber of the aqueous.

Since therefore not one Instance of a membranous Cataract has presented to my Observation, notwithstanding I have been long favour'd with a very extensive Practice in the Diseases incident to the Eye; and that if such an Instance could be found, it appears impossible to account for its Formation, or to remove it, without effectually destroying the essential Parts of Sight, I am persuaded that there are no Cataracts but what are from an Alteration of the chrySTALLINE Humour.

C H A P.



C H A P. II.

*Of the Definition of the Cataract.*

**B**Y a Cataract I understand a diseas'd Alteration of the ChrySTALLINE, attended with Degrees of an unequal Opacity and Colour, Loss of Diameter, preternatural Change of its Consistence, Magnitude, Figure, Gravity, and Situation; where the ChrySTALLINE maintains one unequal Continuity, while thro' all its Parts its Capsula still continues to have its healthful Transparency; and in another State of it, it has Degrees of equal Opacity and Colour, Increase of Diameter, preternatural Change of its Consistence, Gravity, and Situation; and here the ChrySTALLINE suffers a Solution of Continuity in some or all of its Parts, with a diseas'd Alteration of its Capsula. The former I call the true, and the latter the false Cataract.

C H A P.



## C H A P. III.

*Of the Causes of the several Species of  
the true Cataract.*

**A**Uthors are not agreed about the Causes of the true Cataract; some pretend that it is owing to Degrees of a preternatural Viscidity, in that Fluid brought for the Supplies of the ChrySTALLINE, which by possessing Particles of an improper Magnitude, may be so irregularly lodg'd in its Vessels, as to destroy that Equality so necessary to Transparency. Others, on the contrary, deduce this Opacity of the ChrySTALLINE from an Inflammation of the Blood, and preternatural increas'd Momentum of that Fluid with which the ChrySTALLINE is supply'd; for in that Case gross Particles, inconsistent with Transparency, may be impell'd into the lymphatick Vessels, of which it is compos'd. And others attribute this diseas'd Alteration of the ChrySTALLINE, to a Defect in that Liquor which is found between the ChrySTALLINE and its Capsula, and observe, that when the Vessels intended to convey the Supplies to the  
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*of the Chrystalline Humour.* 17

Chryſtalline happen to be obſtructed, from any diſeaſ'd Alteration of their Contents, the Liquor contain'd under the Capſula of the Chryſtalline turns ſowre, whence follow all the Alterations obſervable to attend the ſeveral Species of this Diſeaſe.

Since this Diſeaſe happens to thoſe who are the moſt healthful and temperate, and the moſt free from viſcid or inflam'd Blood, great Variety of Objections muſt neceſſarily be remov'd to make any of theſe Opinions reaſonable; which has induc'd me to believe, that theſe Diſeaſes are owing to a preternatural, forcible, and irregular Contraction of any one or more of the Muſcles of the Globe, by which the Parts of the Chryſtalline are more or leſs violently and irregularly preſs'd; and that the Degrees of their Conſiſtence, Magnitude, Figure, Colour, Gravity, Situation, and Opacity, depend on the Degrees of Strength, and Uniformity of this Preſſure; and that the Cauſe of this preternatural, forcible, and irregular Contraction of any one or more of the Muſcles of the Globe, is owing to the Deficiency of the Supplies of that Fluid, ſo neceſſary to their Senſation and Motion; and that the Cauſe of the Deficiency of ſuch Supplies, is owing to a long, conſtant Direction of the Axis of the Eye to particular Objects, by requiring in a limited Time a greater Supply to particular Muſcles of the Globe, than

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18 *A New Treatise on the Diseases*

what is agreeable to the natural and healthful Course of such Supplies; and this Deficiency of the Supplies to particular Muscles of the Globe, may occasion such Muscles to act with a degree of Strength different from those which act in Opposition to them; whence follows an Irregularity in the general Action of all these Muscles.

From this preternatural Action of these Muscles, the Globe suffers different Changes in its Figure, by which the several Parts of its Contents are differently forced from their healthful Situation; and the *Ligamentum Ciliare* being fix'd to the Circumference of the Capsula of the ChrySTALLINE, and the aqueous Humour lying immediately on the anterior Parts of this Ligament, and the vitreous on its posterior; the chrySTALLINE Humour being thus confin'd in its Capsula, between the two Surfaces of these Humours, the preternatural Pressure which is thus made on them, must necessarily be continu'd to the two Surfaces of the Capsula and the ChrySTALLINE; and in proportion to the Degrees of Strength, and Uniformity of this Pressure, the ChrySTALLINE must not only suffer a diseas'd Alteration in some or all of its Parts, but the whole ChrySTALLINE must be chang'd from its healthful Situation in its Capsula.

From the Degrees of the Irregularity and Force of this preternatural Pressure, with the

the Change of Situation of the Chryſtalline in its Capſula, we may account for all the various Appearances which accompany the Progreſs of each Species of this Diſeaſe.

That the preternatural, forcible, and irregular Contraction of one or more Muſcles of the Globe, is the Cauſe of the ſeveral Species of the true Cataract, is further evident from thoſe Alterations of the Chryſtalline which ſometimes ſucceed a Blow receiv'd near the Eye; for the Alterations of the Figure of the Globe, from the irregular and violent Action of any one or more of its Muſcles in ſuch a Caſe, are the ſame in a greater degree, as the irregular and violent Action of any one or more of theſe Muſcles ariſing from any other; becauſe from the violent, ſudden and irregular Change of the Figure of the Globe ariſing from this Blow, the Chryſtalline is preſs'd with ſuch Violence towards the *Uvea*, as not only to change it from that Situation in its Capſula ſo neceſſary to receive its Supplies, but alſo to force it into the poſterior Chamber of the aqueous; thus there is ſuch an entire Stop put to the healthful Circulation of the fluid Contents of the Chryſtalline, and ſuch a Change made in the Continuity of its Parts, that all the Parts of the Chryſtalline immediately obtain a greater degree of Opacity than could have happen'd in a long time by a leſs degree of this Preſſure, where the Chryſtalline

20 *A New Treatise on the Diseases*

line maintains its Seat in its Capsula; this is that diseas'd Alteration of the Chrystalline known by the Name of the *shaking Cataract*, and so call'd from its continually changing its Situation behind the *Uvea*.

That the preternatural, forcible, and irregular Contraction of any one or more of the Muscles of the Globe is the Cause of the several Species of the true Cataract, is further evident from observing that it always affects such as have employ'd much Time in reading, or viewing particular Objects.



C H A P. IV.

*Of the diagnostick and prognostick Signs, and Cure of the several Species of the true Cataract.*

**T**HE diagnostick Signs of the several Species of the true Cataract are known from the Situation, Colour, and Degrees of an unequal Opacity of the anterior Surface of the diseas'd Chrystalline.

In the first State of this Disease, we perceive Degrees of a small Cloudiness more im-

immediately near the Seat of the Center of the ChrySTALLINE.

And the reason of this small Cloudiness or Opacity appearing near the Center of the Seat of the ChrySTALLINE, is from the central Diameter of the ChrySTALLINE being greater, and consequently containing a greater Number of these alter'd Parts.

In the second State of this Disease, we perceive the Opacity of the ChrySTALLINE to be increas'd, and to be continu'd thro' all the Seat of the ChrySTALLINE, but more immediately in its Center, to maintain the healthful Figure of the ChrySTALLINE, to be advanc'd towards the Center of the Pupil to near half the Thickness of that Part of the posterior Chamber of the aqueous, between the inner Edge of the Pupil and the most prominent Part of the Capsula of the ChrySTALLINE, to have degrees of a Mixture of a pale white and blue Colour, and to continue to impower the Patient to see Shades of Objects in a direct Line from the Axis of the Eye.

In the last State of this Disease we perceive the Opacity of the ChrySTALLINE to be greatly increas'd, and to be very unequal in all its anterior Parts, to maintain very nearly the Figure of the healthful ChrySTALLINE; to be so considerably diminish'd in its Volume, as to have the Thickness of that Part of the posterior Chamber of the aqueous, between the inner Edge of the Pupil and the most



## 22 *A New Treatise on the Diseases*

prominent Part of the Capsula of the Chry-  
stalline,  $\frac{1}{4}$  greater than in its healthful State;  
to have degrees of a Mixture of various Co-  
lours, and to permit a sufficient Light to  
pass between the Edge of the Pupil and an-  
terior Circumference of the Capsula of the  
Chrystalline, so as to empower the Patient to  
see Shades, Colours, and sometimes the Fi-  
gures of many Objects.

The prognostick Signs of this Disease be-  
ing curable, depend in general on the Perfe-  
ction of the immediate Organ of Sight; and  
even in its first State it is seldom remov'd  
without the Operation.

To remove the first Symptoms of this  
Disease, I only recommend the Patient to  
abstain from all such Work as may com-  
mand great Attention of Sight, such as read-  
ing, writing, sewing, &c. to keep the Eyes  
from receiving Light from any very lumi-  
nous Object, and to cause a Shade to be so  
fix'd before the Eyes so as to prevent the  
Light from falling immediately within the  
Axis of the Eye.

The second and last State of this Disease  
will admit of no Remedy but the Opera-  
tion.

C H A P.





C H A P. V.

*Of the Causes of the several Species of  
the false Cataract.*

**T**Hese diseas'd Alterations of the ChrySTALLINE are always preceded by an apparent Plenitude, Distention, and preternatural Change of the Contents of the sanguine and lymphatick Arteries in all the Parts of the Globe, arising from some diseas'd Alteration of the Blood, by which its Momentum is so increas'd as to force into the Vessels of the ChrySTALLINE (from the Extremities of those Arteries employ'd in the Service of their Supplies) certain Particles of an improper Quality to maintain their healthful Continuity.

And from the different Quality and Number of these diseas'd Particles, some or all the Parts of the ChrySTALLINE pass thro' such various diseas'd Alterations of Plenitude, Solution of Continuity, and Opacity, as to have some, or all of its Parts, chang'd into the Consistence of Milk, Cream, and sometimes to a Matter which has some Analogy in its

## 24 *A New Treatise on the Diseases*

Consistence and Colour to that of *Pus*; which by degrees so alter the Direction of the Fibres of the Capsula, as to render it opake; and this alter'd ChrySTALLINE being contain'd in its Capsula as in a Bag, has obtain'd various Denominations, such as, *the bag, the milky, and the purulent Cataract*.



### C H A P. VI.

*Of the diagnostick and prognostick Signs, and Cure of the several Species of the false Cataract.*

**T**H E preceding *Optthalmia* being entirely removed, the Patient continues to complain of Degrees of Pain from Light, and of a very great Diminution of Sight; on examining the Pupil, we perceive Degrees of a small Opacity continu'd thro' the whole Seat of the ChrySTALLINE, and that this Opacity maintains the Figure of the healthful ChrySTALLINE, and is of a clear blueish Colour.

In the second State of this Disease the Patient complains of such a Defect of Sight, as

to be unable from any Direction of the Axis of his Eye to see more than the Shades and Colours of certain Objects; on examining the Pupil, we perceive the Opacity of the ChrySTALLINE to be very greatly increas'd, to continue maintaining the healthful Figure of the ChrySTALLINE, and to be advanc'd towards the Center of the Pupil to near half the Thickness of that Part of the posterior Chamber of the aqueous, between the inner Edge of the Pupil and the most prominent Part of the Capsula of the ChrySTALLINE, and to have Degrees of a white and blue Colour.

**In the last State of this Disease the Patient complains of such an entire Loss of Sight,** as to be only sensible of a very little Light to pass between the inner Edge of the Pupil and Circumference of the Capsula of the ChrySTALLINE, but not sufficient to discover the Shade or Colour of any Object; on examining the Pupil, we perceive the alter'd ChrySTALLINE to be so considerably increas'd in its Volume, as to appear to be immediately placed on the inner Edge of the Pupil; to continue maintaining the Figure of the healthful ChrySTALLINE, and to be of a dark white and yellowish Colour.

The prognostick Signs of Cure in this Disease are always very doubtful, and any Remedy very precarious, according to the different Temperament of the Patient, and the Probability of being injudiciously treated.

To

26 *A New Treatise on the Diseases*

To remove the first Symptoms of this Disease, I recommend an attenuating medicinal Diet, general Evacuations, particularly bleeding of the Temporal Artery, Cupping behind the Ears, &c. with the Assistance of Collyriums, and spirituous Fomentations with Camphire, — to keep the Eyes from receiving Light from any very luminous Objects, and to cause a Shade to be so fix'd before the Eyes, as to stop the Light from falling immediately within the Axis of the Eye.



C H A P. VII.

*Of the Definition of the Glaucoma.*

**B**Y a *Glaucoma* I understand a diseas'd Alteration of the Chrystalline, where the Chrystalline maintains one exact equal Continuity thro' all its Parts, with a diseas'd Alteration of its Capsula, attended with degrees of a very equal Opacity and Colour, very great Increase of Diameter, preternatural Change of its Consistence, Gravity, and Situation; and in its last State with an Elevation, Dilatation, and Immobility of the Pupil, and *Gutta Serena*.

C H A P.





C H A P. VIII.

*Of the Causes of the several Species  
of the Glaucoma.*

**T**Hese diseas'd Alterations of the Chrystalline are always preceded by a preternatural Viscidity of the Blood; and are owing to the Degrees of the Quantity, Momentum, and Viscidity of that Fluid brought for the Supplies of the Vessels of the Chrystalline.

And from the Degrees of the Quantity, Momentum, and Viscidity of this Fluid, all the Vessels of the Chrystalline suffer various Degrees of an equal Plenitude, Opacity and Colour, till the Circulation of their Contents entirely cease.

And this preternatural Plenitude of the Contents of these Vessels by degrees so increases the Volume of the whole Chrystalline, as to place its anterior Surface immediately behind the inner Circumference of the Pupil.

And in a further Increase of the Plenitude of the Contents of these Vessels, the Volume of the Chrystalline is so greatly augmented,

as



## 28 *A New Treatise on the Diseases*

as to raise the Circumference of the Pupil towards the *Cornea*, and violently press on the *Uvea*.

And by this great Increase of the Volume of the ChrySTALLINE, the Plenitude of the Globe is so greatly augmented, as to occasion Degrees of a preternatural Pressure on the immediate Organ of Sight.

And this preternatural Pressure on the *Uvea* and immediate Organ of Sight, is attended with Degrees of a violent Pain immediately in the Fund of the Globe, which continues in degree till in the last State of this Disease there is a Stop put to the Circulation of the Contents of the Vessels of the ChrySTALLINE, and consequently to the Augmentation of it, and Plenitude of the Contents of the whole Globe.



### C H A P. IX.

*Of the diagnostick and prognostick Signs, and Cure of the several Species of the Glaucoma.*

**W**HEN the Patient begins to complain of a Diminution of Sight, on inspecting the Pupil, we perceive Degrees

grees of a ſmall Opacity continu'd thro' the whole Seat of the Chryſtalline; that the Chryſtalline maintains its healthful Figure, and that the Volume of the Chryſtalline is ſo increas'd, as to appear immediately plac'd behind the inner Circumference of the Pupil.

In the ſecond State of this Diſeaſe, the Patient complains of Degrees of the moſt violent Pain in the fund of the Globe, and of ſuch a Diminution of Sight, as to be unable, from any Direction of the Axis of the Eye, to ſee more than the Shades and Colours of certain Objects. On examining the Pupil, we perceive the Volume of the Chryſtalline to be ſo greatly augmented, as to have rais'd the Circumference of the Pupil towards the *Cornea*, to near  $\frac{1}{4}$  of the healthful Thickneſs of the anterior Chamber of the aqueous, that the alter'd Chryſtalline continues to maintain its healthful Figure, and appears of a dark bluifh Colour.

In the laſt State of this Diſeaſe, the Patient complains no longer of Pain, but of ſuch an entire Loſs of Sight, as to be even inſenſible of Light. On examining the Pupil, we perceive the Chryſtalline to be ſo greatly augmented in its Volume, as to have rais'd the Circumference of the Pupil towards the *Cornea*, to near  $\frac{1}{2}$  of the healthful Thickneſs of the anterior Chamber of the Aque-

30 *A New Treatise on the Diseases*

Aqueous; that the alter'd Chrystalline continues to maintain its healthful Figure, and appears of a pale Green Colour.

The Prognostick Signs of the Cure of this Disease are always exceeding dangerous, and never admit of any certain Remedy for the Recovery of Sight, but in its first State; and then only from the Operation.

However, the Cure may be attempted in its first State, by a warm attenuating medicinal Diet, Bleeding, Cupping, repeated Emeticks, &c. with the Assistance of Colliriums, and Spirituous Fomentations, — to keep the Eyes from receiving Light from any very luminous Objects, and to cause a Shade to be so fix'd before the Eyes, as to keep the Light from falling immediately within the Axis of the Eye.

The second and last State of this Disease, will admit of no Remedy, for the Recovery of Sight; and the palliative Cure consists in an attenuating Medicinal Diet, warm Bathing, Bleeding in the temporal Arteries, Cupping behind the Ears, &c.

C H A P.



C H A P. X.

*Of the Regimen necessary to precede my new Operations for the several Species of the true Cataract, and the several Species of the Cataract called the shaking Cataract. --- For the several Species of the false Cataracts, and the several Species of that State of the Glaucoma, where the Iris, and immediate Organ of Sight, maintain their healthful State.*

**S**INCE a perfect Knowledge of the Animal OEconomy, is in no Case more required, than in the Treatment necessary to these Operations, (which, of all others, are infinitely the most difficult, and attended with the greatest Variety of Accidents)



32 *A New Treatise on the Diseases*

dents) they ought never to be attempted, but with the Assistance of a Physician.

I shall therefore only recommend an attenuating Medicinal Diet, with gentle Evacuations some Days before the Operation.



*Of the Manner of making my New Operations necessary to the Removal of the several Species of the true Cataract, and the several Species of the Cataract call'd the Shaking Cataract. For the several Species of the false Cataract, and for the several Species of that State of the Glaucoma, where the Iris and immediate Organ of Light maintain their healthful State.*

C H A P.





C H A P. XI.

*Of the Manner of making my New  
Operation for the feveral Species of  
the true Cataract.*

**H**AVING plac'd my Patient in the usual Position, I fix my Speculum, and with a Lancet make a small Longirudinal Incision, of about half a Line in Length, through the outward and inward Membranes of the Globe, into the vitreous Humour. I make this Incision about one Line and a half below that Part of the lateral and outward Edge of the *Cornea*, situated about two Lines below a Line drawn Parallel to the greater and lesser *Canthus* of the Eye. I then pass, in a perpendicular Direction to the Globe of the Eye, a *plano* - Convex Needle of about one sixth of a Line in Thickness, through its most Convex Part, and one third of a Line in its greatest Diameter, with its Convex Surface towards the superior Part of the Orbit, into the Opening

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### 34 *A New Treatise on the Diseases*

ing I have made in the Globe with the Lancer. My Needle thus enter'd, I direct its Point about two Lines into the Body of the Vitreous, then very slowly bring my Needle forward with its Surfaces in the same Direction, 'till its Point is brought about a Line below a Line drawn Parallel to the inferior Insertions of the *Ligamentum Ciliare*, with the Capsula of the ChrySTALLINE, and about the same Distance from the Capsula. I then continue my Needle about one Line forward, in the same Direction, and thus pass its Convex Surface, under the inferior Surface of the Capsula of the ChrySTALLINE, about a Line below it, and about the same Distance below the inferior Insertions of the *Ligamentum Ciliare*. I then gently raise my Needle in the same Direction, 'till its Convex Surface suffers some small Resistance from the ChrySTALLINE, which I judge with great Exactness, by inspecting the Pupil, and observing a Motion in the alter'd ChrySTALLINE. And being thus assured that the Convex Part of my Needle is placed immediately under some Part of the Capsula of the diseas'd ChrySTALLINE, I gently raise the ChrySTALLINE about a third or fourth Part of a Line, to learn, with some Exactness, on what Part of the Capsula the Convex Part of my Needle is placed; and if on inspecting the Pupil, I perceive that the anterior

*of the Chrystalline Humour: 35*

terior Surface of the Capsula of the Chrystalline is not continued in a direct Line, at the same Distance from all the inner Surface of the *Uvea*, but approaches nearer to, or recedes farther from it, I very slowly continue my Needle towards the inferior Part of the Globe, with its Surfaces in the same Direction, and its anterior Edge at the same Distance from the inner Surface of the *Uvea*, and Insertions of the *Ligamentum Ciliare*, 'till I judge the Convex Part of my Needle, about the same Distance below the inferior Surface of the Capsula, and Insertions of the *Ligamentum Ciliare*, as it was immediately preceding its being first placed under this Capsula. I then replace the Convex Surface of my Needle, on the inferior Surface of the Capsula of the Chrystalline, nearer or farther from the inferior and inner Surface of the *Uvea*, or nearer or farther from the Insertions of the *Ligamentum Ciliare*, according to the Direction I received from the Motion of the alter'd Chrystalline: And when I find by such a Motion, that the Convex Surface of my Needle is so exactly placed under its Capsula, that on raising it towards the superior Part of the Orbit, the anterior Surface of the Capsula of the Chrystalline would be continued, in a direct Line, at the same Distance from all the inner Surface of the *Uvea*: I again raise the Chrystalline about

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### 36 *A New Treatise on the Diseases*

a third of a Line towards the superior Part of the Orbit, and instantly withdraw my Needle about two Lines, continuing its Surfaces in the same Direction and Distance from the superior and inferior Part of the Globe, and thus permit the inferior Surface of the Capsula of the ChrySTALLINE to return to its former Situation. — The most prominent Part of the inferior Surface of this Capsula, being now about the same Distance below the Point of my Needle, as it was raised from its Situation by the Convex Part of it, I direct the Point of my Needle, with some Violence, about two Lines forward, with its Surfaces at the same Direction and Distance from the superior and inferior Parts of the Globe: And thus the Point of my Needle passes through the Capsula and ChrySTALLINE, about a Line forward from its Entrance. I then forcibly break through those Parts of the ChrySTALLINE, and its Capsula, over which my Needle is placed, and thus make an Opening in the inferior Part of the Capsula; observing by this Action, that my Needle forcibly enters about two Lines into that Part of the Vitreous. — I then withdraw my Needle about three Lines in the same Direction it falls in, and gently raise its Point towards the superior Part of the Globe, about a Line above a Line drawn parallel to the superior and lateral Surface of the Capsula of the ChrySTALLINE,



ſtalline, and Inſertions of the *Ligamentum Ciliare*. I then continue my Needle forward, with its Surfaces in the ſame Direction, 'till I judge its Point be about a Line above the moſt prominent Part of the ſuperior Surface of the Capsula. I then gently raiſe my Hand, 'till the inferior Surface of my Needle ſuffers ſome ſmall Reſiſtance from the Chryſtalline; which I judge of, as before, with great Exactneſs, by inſpecting the Pupil, and obſerving the Motion of the alter'd Chryſtalline. And being thus aſſured that the plain Surface of my Needle is immediately placed on ſome Part of the ſuperior and lateral Surface of the Capsula of the Chryſtalline, I gently depreſs the Chryſtalline about a third or fourth Part of a Line, to learn, with ſome Exactneſs, on what Part of the Capsula my Needle is placed: And if on inſpecting the Pupil, I perceive that the anterior Surface of the Chryſtalline is not continued, in a direct Line, at the ſame Diſtance, from all the inner Surface of the *Uvea*, but approaches nearer to, or recedes farther from it; I very ſlowly raiſe my Needle towards the ſuperior Part of the Globe, with its Surfaces in the ſame Direction, and its anterior Edge at the ſame Diſtance from the ſuperior and inner Surface of the *Uvea*, and Inſertions of the *Ligamentum Ciliare*, 'till I judge the plain Surface of my Needle about the ſame



### 38 *A New Treatise on the Diseases*

Distance above the superior and lateral Surface of the Capsula of the ChrySTALLINE, and Insertions of the *Ligamentum Ciliare*, as it was immediately preceding its being placed on this Capsula. — I then replace the plane Surface of my Needle, on the superior and lateral Surface of the Capsula of the ChrySTALLINE, nearer or farther from the superior and inner Surface of the *Uvea*, or nearer to, or farther from the superior and lateral Insertions of the *Ligamentum Ciliare*, according to the Direction I received from the Motion of the alter'd ChrySTALLINE; and when I find by the Motion of the alter'd ChrySTALLINE, that the plane Surface of my Needle is so exactly placed on its Capsula, that on continuing it towards the inferior Part of the Orbit, the anterior Surface of the Capsula of the ChrySTALLINE would be continued in a direct Line, at the same Distance from all the inner Surface of the *Uvea*; I again depress the ChrySTALLINE, about half a Line towards the inferior Part of the Globe; and by this Motion of my Needle, I enlarge the Opening I made in the inferior Part of the Capsula. I then once more very slowly raise my Needle towards the superior Part of the Globe, with its Surface in the same Direction, and its anterior Edge at the same Distance from the superior and inner Surface of the *Uvea*, and Insertions of the *Ligamentum Ciliare*,  
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as it was immediately preceding its being first placed on the superior Surface of the Capsula of the Chrystalline. I then replace the plane Surface of my Needle, about a Line farther towards the posterior Part of the Capsula, or about a Line farther from the superior Insertions of the *Ligamentum Ciliare*. My Needle thus placed, I continue it very slowly, directing its plane Surface immediately towards the Opening I made in the inferior Part of the Capsula of the Chrystalline; and when I have thus forcibly pass'd the greater Circumference of the diseased Chrystalline, the remaining Part of it instantly follows. Thus the alter'd Chrystalline falls into those Parts of the Vitreous through which I pass'd my Needle, after having broke through the inferior Parts of the Chrystalline, and its Capsula.

During this Change of Situation of the alter'd Chrystalline, I continue the plane Surface of my Needle on the superior and posterior Part of its Capsula, till I perceive it in its Passage on the Capsula about the Center of the Axis of the Eye, when instantly I raise the anterior Edge of my Needle towards the superior Part of the Orbit, and in this Direction pass it with great Exactness behind the inferior Surface of the *Uvea*. My Needle thus plac'd, with great quickness, I turn its plane Surface towards the inferior

# 40 *A New Treatise on the Diseases*

Part of the Globe, and thus it necessarily falls on some of the Parts of the present superior Surface of the alter'd ChrySTALLINE. My Needle thus plac'd on the present superior Surface of the ChrySTALLINE, I instantly direct its anterior Edge towards the inferior Part of the inner Surface of the *Uvea*; and by thus changing the Direction of my Needle, its plane Surface is brought about the same distance towards the present anterior Surface of the alter'd ChrySTALLINE. The plane Surface of my Needle being now obliquely situated on the posterior Part of the Globe, I continue my Needle in the same Direction to about a Line below a Line drawn parallel to the Center of the Globe, and thus place the ChrySTALLINE near the inferior and lower Parts of the *Vitreous*. — I continue my Needle about a Minute thus plac'd on the present anterior Surface of the diseas'd ChrySTALLINE; and after raising the Needle's anterior Edge, till its convex Surface is immediately directed towards the superior Part of the Orbit, I very slowly take it out of the Eye in the same Direction.

By thus passing the diseas'd ChrySTALLINE thro' the Opening I made in its Capsula, the superior Part of this Capsula being suspended by its Adhesions to the *Ligamentum Ciliare*, the superior and posterior Parts of the alter'd ChrySTALLINE pass with great Facility from under its Capsula, not only because of  
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*of the Chryſtalline Humour.* 41

the Affiſtance it receives by the Needle, but by the Help of the *Vitreous*, which at this time neceſſarily comes forward with ſome degree of Force, to give place for the ſudden Reception of the alter'd Chryſtalline.

And from this ſlow and regular Paſſage of the alter'd Chryſtalline thro' the Opening I made in its Capsula, the concave *Vitreous* muſt neceſſarily change its Situation, and riſe with great Exactneſs immediately behind the ſuperior and poſterior Surface of this Capsula.

The Chryſtalline being thus paſs'd out of the Axis of the Eye, and the ſuperior and poſterior Parts of its Capsula thus forc'd on the ſuperior and inner Surface of the anterior, it is thus the anterior, and Part of the Circumference of the poſterior Part of the Capsula, become immediately ſeated before the Membrane of the now convex *Vitreous*; and thus the Figure of the now convex *Vitreous* is the ſame with that of the healthful Chryſtalline.

If we believe that the *Ligamentum Ciliare* is in any manner neceſſary to our ſeeing Objects at different Diſtances, whether from altering the Figure, or changing the Situation of the Chryſtalline; ſuch Uſes of it are very nearly preſerv'd after this Operation, as in a healthful Eye; for the diſeas'd Chryſtalline thus paſs'd thro' an Opening in its Capsula, and the *Ligamentum Ciliare* maintaining its



## 42 *A New Treatise on the Diseases*

its healthful Adhesions, the Capsula its healthful Figure, and distance from the *Cornea*, and the aqueous Chambers their healthful Plenitude; it follows that the *Ligamentum Ciliare*, by altering the Convexity of the Capsula, must necessarily place the Surface of the convex *Vitreous* nearer to, or farther from the immediate Organ of Sight, with very nearly, if not exactly, the same Degrees of Strength, as when the Capsula possess'd its healthful Contents.

But if we consider, that in the ordinary Operation for the Removal of the Cataract, the *Ligamentum Ciliare* is always forcibly separated from its Adhesions to the Capsula of the ChrySTALLINE, and by consequence such Uses of it effectually destroy'd; we shall have very good reason to believe that the *Ligamentum Ciliare* has no such Power, since we have many Instances of the Sight having been so restor'd by it, as to have enabled the Patient to see Objects at different Distances.



C H A P. XII.

*Of the Reasons of making my new Operation necessary to the Removal of the several Species of the true Cataract, as directed in the preceding Chapter.*

**I** Pass my Needle in a perpendicular Direction to the Globe of the Eye, with its convex Surface towards the superior Part of the Orbit, that by the succeeding Motions of my Needle I may with the greater Certainty place its convex Surface under the Capsula of the ChrySTALLINE. I endeavour to place the convex Surface of my Needle about a Line below the inferior Surface of this Capsula, and about the same distance below the inferior Insertions of the *Ligamentum Ciliare*, that I may afterwards with the greater Facility properly place its convex Surface under the inferior Surface of the Capsula of the ChrySTALLINE.—My Needle thus plac'd, I raise its convex Surface till it meets with a sufficient Resistance from the ChrySTALLINE to  
move

#### 44. *A New Treatise on the Diseases*

move it from its Seat, that by examining its Motion thro' the Pupil, I may not only be assur'd that my Needle is plac'd immediately under the ChrySTALLINE, but learn with great Exactness under what Part of the Capsula my Needle is thus plac'd. I endeavour by the succeeding Motions of my Needle, to place its convex Surface immediately under a certain Part of the Capsula of the ChrySTALLINE, that I may be the more exact in the Place proper to make the Opening into this Capsula. — The convex Part of my Needle being properly placed under the Capsula of the ChrySTALLINE, I raise the ChrySTALLINE about a third of a Line towards the superior Part of the Orbit, and instantly withdraw my Needle about two Lines with its Surface in the same Direction, that by thus permitting the ChrySTALLINE to fall a certain distance below the Point of my Needle, I may with greater Certainty make an Opening of a proper Length in the inferior Part of its Capsula. — After having open'd the Capsula, I continue my Needle about two Lines towards the inferior Part of the Orbit, that by thus forcibly breaking into those Parts of the *Vitreous* over which my Needle was plac'd, there may be a Place prepar'd for the more easy Reception of the diseas'd ChrySTALLINE. I endeavour by the succeeding Motions so to place the plane Surface of my Needle on the superior and lateral

lateral Surface of the Capsula of the Chryſtalline, that on directing my Needle towards the inferior Part of the Orbit, the anterior Surface of the Capsula of the diseas'd Chryſtalline may maintain the ſame Diſtance and Direction from all the inner Surface of the *Uvea*. I endeavour by the ſucceeding Motions of my Needle to replace its plane Surface about a Line farther, towards the poſterior Part of the Capsula of the Chryſtalline, or about a Line farther from the ſuperior Inſertions of the *Ligamentum Ciliare*, that I may not be expos'd in paſſing the Chryſtalline thro' the Opening I made in its Capsula, to break any of thoſe Parts of the Capsula on which my Needle is plac'd, or ſeparate this Capsula from any of its Adheſions with the *Ligamentum Ciliare*; which might have happen'd, had I endeavour'd to force the Chryſtalline thro' the Opening in its Capsula, when the plain Surface of my Needle was in its preceding Situation: And to the more effectually anſwering this Intention, I continue my Needle in this oblique Direction of its plane Surface on the ſuperior and poſterior Part of the Capsula of the Chryſtalline, till I perceive it on its Paſſage on the Capsula about the Center of the Axis of the Eye, and then I raiſe the anterior Edge of my Needle towards the ſuperior Part of the Orbit; and in this Direction paſs it behind the inferior Surface of the *Uvea*.

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## 46 *A New Treatise on the Diseases*

The alter'd Chryftalline being thus pass'd thro' the Opening in its Capsula, with the plane Surface of my Needle parallel to the inner Surface of the *Uvea*; I turn this plane Surface of my Needle with great Quickness towards the inferior Part of the Globe, and endeavour by all the succeeding Motions so to place the Chryftalline, as it may maintain its Seat out of the Axis of the Eye. I continue the plane Surface of my Needle for some little time plac'd on the present anterior Surface of the alter'd Chryftalline, to give time for the Parts of the new convex *Vitreous* to possess their new Seat with the greater Exactness, and thus render the alter'd Chryftalline less liable to change from the Situation in which I have plac'd it. I then raise the anterior Edge of my Needle, till its convex Surface is immediately directed towards the superior Part of the Orbit, and draw my Needle out of the Eye in the same Direction, that I may not be expos'd to change any of the present Situation of the Contents of the Globe in its Passage.

C H A P.



C H A P. XIII.

*Of the Manner of making my new Operation, necessary to the Removal of the several Species of that Cataract which arises from a Blow receiv'd near the Eye; where the alter'd Chrystalline is pass'd thro' the anterior Part of its Capsula, and being continually changing its Situation behind the Uvea, is known by the Name of the shaking Cataract.*

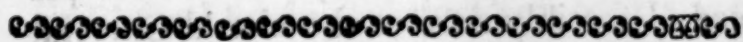
**I** Proceed exactly as in the Operation for the several Species of the true Cataract, till my Needle is pass'd about two Lines into the *Vitreous*; I then withdraw my Needle in the same Direction, till I judge its Point about one Line from its Entrance into the Globe; I then gently raise the posterior Edge of my Needle, and very slowly direct my Hand backwards, till I judge that its

48 *A New Treatise on the Diseases*

convex Surface is brought parallel to the inner Surface of the *Uvea*; I then continue my Needle forward with its Surfaces in the same Direction, till I judge its Point to be enter'd within the Axis of the Eye. I then continue to direct my Hand backwards, till I judge that the convex Surface of my Needle is obliquely situated from its Point to the inner and outward Surface of the *Uvea*. I then continue my Needle forward with its Surfaces in the same Direction, till I perceive its Point immediately before the present anterior Surface of the diseas'd Chrystalline; I instantly direct the superior Edge of my Needle towards the superior Part of the Globe, till its plain Surface is plac'd on or near the superior and lateral Surface of the alter'd Chrystalline; I gently depress the Chrystalline about a third or fourth Part of a Line, to learn with some Exactness on what Part of the Chrystalline my Needle is plac'd; and if on inspecting the Pupil, I perceive that the anterior Surface of the Chrystalline is not continu'd in a direct Line at the same distance from the inner Surface of the *Uvea*, but approaches nearer to, or recedes farther from it, I then replace the plane Surface of my Needle nearer to, or farther from the Surface of the *Uvea*, according to of the Direction I receiv'd from the Motion the alter'd Chrystalline; and when I find by the Motions of the alter'd Chrystalline, that

*of the Chryſtalline Humour.* 49

that the plane Surface of my Needle is ſo exactly plac'd on the Chryſtalline, that on preſſing it towards the inferior Part of the Orbit, the antetior Surface of the diſeas'd Chryſtalline would be continu'd in a direct Line, at the ſame diſtance from all the inner Surface of the *Uvea*. I continue my Needle with its Surfaces in the ſame Direction thro' the Axis of the Eye, and thus forcibly remove the alter'd Chryſtalline into thoſe Parts of the *Vitreous*, over which it was immediately plac'd. My Needle thus plac'd on the preſent ſuperior Surface of the alter'd Chryſtalline, I inſtantly direct its anterior Edge towards the inferior Part of the inner Surface of the *Uvea*, and finiſh the Operation as in that for the Removal of the ſeveral Species of the true Cataract.



C H A P. XIV.

*Of the Reaſons of making my new Operation neceſſary to the Removal of the ſeveral Species of the Cataract known by the Name of the ſhaking Cataract, as directed in the preceding Chapter.*

**M**Y Needle having paſs'd about two Lines into the *Vitreous*, I withdraw it in the ſame Direction, till I judge its Point  
E about



50 *A New Treatise on the Diseases*

about one Line from its Entrance into the Globe, for the Service intended by the succeeding Motions. I gently raise the posterior Edge of my Needle, and very slowly direct my Hand backward, till I judge that its convex Part is brought parallel to the inner Surface of the *Uvea*, that on directing its Point into the Axis of the Eye, I may not be expos'd to wound any of the Parts of the *Ligamentum Ciliare*. I endeavour by the succeeding Motions of my Needle so to place its plane Surface on the superior and lateral Surface of the alter'd Chrystalline, that on directing my Needle towards the inferior Part of the Orbit, the anterior Surface of the alter'd Chrystalline may continue at the same Distance and Direction from the inner Surface of the *Uvea*. My Needle thus placed, I forcibly remove the alter'd Chrystalline, and finish the Operation as in the true Cataract, for the Reasons given in that Chapter.

C H A P.



C H A P. XV.

*Of the Manner of making my new  
Operation necessary to the Removal  
of the several Species of the false  
Cataract.*

**I** Proceed exactly as in the Operation for the several Species of the true Cataract, till I find by the Motion of the alter'd Chrystalline that the plane Surface of my Needle is so exactly plac'd on the superior and lateral Surface of the Capsula of the alter'd Chrystalline, that on continuing it towards the inferior Part of the Orbit, the anterior Surface of the Capsula of the alter'd Chrystalline might be placed in a direct Line at the same distance from the inner Surface of the *Uvea*. I again depress the alter'd Chrystalline about half a Line towards the inferior Part of the Globe; and by this Motion of my Needle I enlarge the Opening I made in the inferior Part of its Capsula, and lessen the Plenitude of its Contents. I then once more raise my Needle towards the superior Part of the Globe, with its Sur-

52 *A New Treatise on the Diseases*

faces in the same Direction, and its anterior Edge at the same distance from the superior and inner Surface of the *Uvea*, as it was immediately preceding its being first plac'd on the superior Part of the Capsula of the ChrySTALLINE. I then replace the plane Surface of my Needle about a Line farther, towards the posterior Part of the Capsula of the ChrySTALLINE, or about a Line farther from the superior Insertions of the *Ligamentum Ciliare*. My Needle thus plac'd, I continue it very slowly, directing its plane Surface immediately towards the Opening I made in this Capsula, and thus forcibly remove the alter'd ChrySTALLINE into those Parts of the *Vitreous* thro' which I pass'd my Needle, after having broke thro' the inferior Parts of the ChrySTALLINE and its Capsula.

And as the Contents of the ChrySTALLINE are thus pass'd thro' the Opening in this Capsula, I continue the plane Surface of my Needle on the superior and lateral Surface of the Capsula of the ChrySTALLINE, till I judge it in its Passage on the Capsula about the Center of the Axis of the Eye, when instantly I raise the anterior Edge of my Needle towards the superior Part of the Orbit; and in this Direction pass it with great Exactness behind the inferior Surface of the *Uvea*. My Needle thus plac'd, I turn with great Quickness its plane Surface towards the inferior Part of the Orbit; thus it necessarily falls on some  
of

*of the Chryſtalline Humour.* 53

of the Parts of the alter'd Chryſtalline. I then direct the plane Surface of my Needle obliquely towards the poſterior Part of the Globe, and forcibly continue it about a Line below a Line drawn parallel to the Center of the Globe, and thus mix the Contents of the alter'd Chryſtalline with ſome of the inferior Parts of the Vitreous.

By thus paſſing the diſeaſ'd Chryſtalline thro' the Opening I made in its Capsula, the ſuperior Part of this Capsula being ſuſpended by its Adheſions to the *Ligamentum Ciliare*, the alter'd Chryſtalline paſſes with great Facility from under its Capsula, not only from the Aſſiſtance it receives by the Needle, but from that of the Vitreous, which at this time neceſſarily comes forward with ſome degree of Force, to make room for the Reception of the alter'd Chryſtalline.

And from this ſlow and regular Paſſage of the alter'd Chryſtalline out of the Axis of the Eye, the concave Vitreous muſt neceſſarily change its Situation, and riſe with great Exactneſs immediately behind the ſuperior and poſterior Surface of this Capsula, and become convex; and as the ſuperior and poſterior Part of this Capsula is thus forced on the inner Surface of the anterior, the whole Capsula of the alter'd Chryſtalline is immediately ſeated before the Membrane of the now convex Vitreous; and it is thus the Figure of the convex Vitreous is nearly, if



#### 54 *A New Treatise on the Diseases*

not exactly, the same with that of the healthful Chrystalline.

After having thus remov'd from the Axis of the Eye the Contents of the alter'd Chrystalline, I proceed to remove this opake Capsula from before the Membrane of the now convex Vitreous; and for this End I withdraw my Needle, till I judge its Point about one Line from its Entrance into the Globe; and after having gently rais'd the posterior Edge of my Needle, I very slowly direct my Hand backwards, till I judge that its convex Surface is brought parallel to the inner Surface of the *Uvea*. I then continue my Needle forward with its Surface in the same Direction, till I judge its Point to be enter'd within the Axis of the Eye. I then continue to direct my Hand backwards, till I judge that the convex Surface of my Needle is obliquely situated from its Point to the inner and outward Surface of the *Uvea*. I then continue my Needle forward with its Surface in the same Direction, till I perceive its Point enter'd into the posterior Chamber of the Aqueous, immediately before the anterior Surface of the opake Capsula. I then lessen the Pressure of my *Speculum*, and continue my Needle thro' the posterior Chamber of the Aqueous, with its Surfaces in the same Direction, till its Point is carried about half a Line under the inferior and lateral Edge of the Pupil, when the Pupil is neither contracted

tracted nor dilated more than in its healthful Diameter in the ordinary Degrees of Light. I then gently press on that Part of the Capsula over which the inferior Edge of my Needle is plac'd, and thus separate with great Exactness all the inferior and lateral Extremities of the *Ligamentum Ciliare* towards the greater *Canthus*, from their Adhesion to this opake Capsula. I then continue the plane Surface of my Needle towards the Center of the opake Capsula, and direct its Point forward till arriv'd about the same distance under the superior and lateral Edge of the Pupil, as it was in the preceding Motion of my Needle under the inferior; and by gently pressing with the superior Edge of my Needle, I separate in like manner all the superior and lateral Extremities of the *Ligamentum Ciliare* towards the greater *Canthus*, from their Adhesion to this opake Capsula. I then withdraw my Needle till its Point is brought from behind the Pupil, and continue to raise the superior Edge of it towards the superior Part of the Orbit, and thus pass its plane Surface immediately before the anterior Part of this opake Capsula, till its Point is arriv'd about the same distance under the Center of the superior Edge of the Pupil, as it was in the preceding Motion under the superior and lateral; and by gently pressing with the superior Edge of my Needle, I in like manner

## 56 *A New Treatise on the Diseases*

separate with great Exactness all the superior and lateral Extremities towards the lesser *Canthus* from their Adhesions to this opake Capsula.

The Opake Capsula of the Chrystalline being thus separated on all Sides from its Adhesions to the *Ligamentum Ciliare*; and the plane Surface of my Needle, now placed on the superior and lateral Part of the anterior Surface of this opake Capsula, I very gently press with the superior Edge of my Needle on this Capsula; and by continuing its Surfaces in the same Direction towards the inferior and inner Surface of the *Uvea*, the opake Capsula passes with great Exactness from before the Surface of the now Convex Vitreous. — My Needle with the opake Capsula of the Chrystalline being now out of the Axis of the Eye, and seated immediately behind the inferior and inner Surface of the *Uvea*, I continue it, with its Surfaces in the same Direction, to about a Line below a Line drawn parallel to the Center of the Globe, and thus place this opake Capsula near the inferior and lower Part of the Vitreous; I then instantly raise the anterior Edge of my Needle, 'till its Convex Surface is immediately directed towards the superior Part of the Orbit, and very slowly take it out of the Eye, in the same Direction.

C H A P.



C H A P. XVI.

*Of the Reasons of making my new Operation necessary to the Removal of the several Species of the false Cataract, as directed in the preceding Chapter.*

**I** Proceed exactly, as in the Operation for the several Species of the true Cataract, 'till the plane Surface of my Needle is properly placed on the superior and lateral Surface of the Capsula of the alter'd Chrystalline; that by the succeeding Motions of my Needle in pushing the Chrystalline towards the inferior Part of the Globe, the anterior Surface of its Capsula may maintain the same Distance and Direction from the inner Surface of the *Uvea*. I then endeavour to replace the plane Surface of my Needle, about a Line farther towards the posterior Part of the Capsula of the alter'd Chrystalline, or about a Line farther from the superior Insertions of the *Ligamentum Ciliare*,  
that



58 *A New Treatise on the Diseases*

that I may not be exposed on pressing the alter'd ChrySTALLINE, through the Opening I made in its Capsula, to break any of those Parts of the Capsula, on which my Needle is placed, or separate this Capsula from any of its Adhesions with the *Ligamentum Ciliare*; which might have happen'd, had I endeavour'd to force the alter'd ChrySTALLINE through the Opening in its Capsula, when the plane Surface of my Needle was in its preceding Situation. — The alter'd ChrySTALLINE being pass'd through the Opening I made in its Capsula, I endeavour, by all the succeeding Motions of my Needle, to mix its Contents with those of that Part of the Vitreous, which is seated out of the Axis of the Eye; that notwithstanding its Fluidity, no Part of it shall be able to enter the posterior Chamber of the Aqueous, during the Progress of the Operation, necessary to the Removal of the Capsula from before the Surface of the now Convex Vitreous.

Having thus placed the Contents of the ChrySTALLINE, I withdraw my Needle, with its Surfaces in the same Direction, 'till I judge its Point about one Line from its Entrance with the Globe, for the Service intended by the succeeding Motion. I gently raise the posterior Edge of my Needle, and very slowly direct my Hand backward, 'till I judge that its Convex Surface is brought

brought parallel to the inner Surface of the *Uvea*; that on directing its Point into the Axis of the Eye, I may not be expos'd to wound any of the Parts of the *Ligamentum Ciliare*. My Needle being enter'd into the posterior Chamber of the Aqueous, I lessen the Pressure of my Speculum, that by the present Loss of the Plenitude of the Globe, from having open'd the aqueous Chambers, I may so considerably enlarge its Diameter, and lessen its Convexity, as to be able to pass with the greatest Facility the plane Surface of my Needle immediately before all the Surface of the opake Capsula, without being expos'd to alter in its Passage the present Position of any of the Parts of the Capsula or Vitreous. — I intend, by all the succeeding Motions of my Needle, to remove with great Exactness the opake Capsula, without wounding, or violently breaking any of the Parts of the *Ligamentum Ciliare*, and effectually place it out of the Axis of the Eye.



## C H A P. XVII.

*Of the Manner of making my new Operation necessary to the Removal of the several Species of that State of the Glaucoma, where the Iris and immediate Organ of Sight maintain their healthful Perfection.*

**I** Proceed exactly, as in the Operation for that Alteration of the ChrySTALLINE, call'd the *Shaking Cataract*, 'till I perceive the Point of my Needle within the posterior Chamber of the Aqueous. I then separate the Capsula of the ChrySTALLINE from its Adhesions to the *Ligamentum Ciliare*, exactly after the same Manner as I have directed in that Part of the Operation for the several Species of the false Cataract, where I remove the opake Capsula from before the Convex Vitreous. — The Capsula of the ChrySTALLINE being now separated on all Sides from its Adhesions to the  
Liga-

*of the Chrystalline Humour.* 61

*Ligamentum Ciliare*, and the plane Surface of my Needle now placed on the superior and lateral Part of the anterior Surface of this Capsula, I gently deprefs the Chrystalline about a third or fourth Part of a Line, to learn with some Exactness, on what Part of the Capsula of the Chrystalline my Needle is placed: And if on inspecting the Pupil, I perceive that the anterior Surface of the Capsula of the Chrystalline is not continued in a direct Line, at the same Distance from the inner Surface of the *Uvea*, but approaches nearer to, or recedes farther from it; I then replace the plane Surface of my Needle nearer or farther from the inner Surface of the *Uvea*, according to the Direction I received from the Motion of by the alter'd Chrystalline; and when I find by the Motion of the alter'd Chrystalline, that the plane Surface of my Needle is so exactly placed, that on continuing it towards the inferior Part of the Orbit, the anterior Surface of the Capsula of the alter'd Chrystalline would be continued in a direct Line, at the same Distance from the inner Surface of the *Uvea*; I continue to move my Needle very slowly through the Axis of the Eye, 'till its Convex Surface is placed immediately behind the inferior and inner Surface of the *Uvea*, and thus forcibly remove the Chrystalline with the Capsula, into the Vitreous.

By



## 62 *A New Treatise on the Diseases*

By this slow and regular Manner of removing the Chrystalline with its Capsula out of the Axis of the Eye, the Concave Vitreous must necessarily come forward, to give Place for the Reception of the alter'd Chrystalline, and become Convex.

My Needle thus placed with its plane Surface on the present superior Surface of the Capsula of the alter'd Chrystalline, I instantly direct its anterior Edge towards the inferior Part of the inner Surface of the *Uvea*; and by thus changing the Direction of my Needle, its plane Surface is brought about the same Distance towards the present anterior Surface of the Capsula of the alter'd Chrystalline.

The plane Surface of my Needle being now obliquely situated towards the posterior Part of the Globe, I continue my Needle in the same Direction, about a Line below a Line drawn parallel to its Center, and thus place the Chrystalline near the inferior and lower Parts of the Vitreous. — I then continue my Needle about two Minutes thus plac'd on the present anterior Surface of the diseased Chrystalline: And after raising its posterior Edge till its convex Surface is immediately directed towards the superior Part of the Orbit, I very slowly take it out of the Eye in the same Direction.



C H A P. XVIII.

*Of the Reasons of making my new Operation necessary to the Removal of the several Species of that State of the Glaucoma, where the Iris and immediate Organ of Sight maintain their healthful Perfection.*

I Proceed exactly as in the Operation for that Alteration of the Chrystalline, call'd the *Shaking Cataract*, 'till I perceive the Point of my Needle within the posterior Chamber of the aqueous Humour; that I may with the greater Certainty enter this Chamber, without being expos'd to wound any of the Parts of the *Ligamentum Ciliare*. I intend by the succeeding Motions of my Needle to separate with great Exactness the *Ligamentum Ciliare* from all its Adhesions to the Capsula of the Chrystalline, without wounding or violently breaking any of its Parts. I endeavour by the succeeding Motions of my Needle so to place its  
plane

## 64 *A New Treatise on the Diseases*

plane Surface on the superior and lateral Surface of the Capsula of the ChrySTALLINE, that on directing my Needle towards the inferior Part of the Orbit, the anterior Surface of the Capsula of the alter'd ChrySTALLINE may continue at the same Distance and Direction from all the inner Surface of the *Uvea*.

The ChrySTALLINE with its Capsula being plac'd out of the Axis of the Eye ; with the plane Surface of my Needle on the present superior Surface of the Capsula of the alter'd ChrySTALLINE, I endeavour by all the succeeding Motions so to place the alter'd ChrySTALLINE, as it may maintain its Seat out of the Axis of the Eye.

## C H A P.



C H A P. XIX.

*Of the Regimen necessary to succeed my new Operations for the several Species of the true Cataract, and the several Species of the Cataract call'd the shaking Cataract. For the several Species of the false Cataract, and the several Species of that State of the Glaucoma, where the Iris and immediate Organ of Sight maintain their healthful Perfection.*

**A**FTER the Operation I cause some Drops of a Mixture (made of a Tincture of *Bals. Peruv.* with warm Water) to be dropt into the Eye for some Minutes; and immediately after I cause to be apply'd over the Eyelids a warm Cataplasme, made with some Drops of the above-mention'd Mixture, and the Pulp of *Cassia*. These Drops and Cataplasme are to be repeated every four Hours (except at the time of Sleep) till the second  
F Morning



66 *A New Treatise on the, &c.*

Morning after the Operation, when I cause the Eye to be fomented for about half an Hour, in the usual manner, with a spirituous Fomentation with Camphire. I then give free Power to the Motion of the Eyelids, and cause a Shade to be so fix'd before the Eye, as to admit of its receiving very little Light, and entirely to prevent the Light from falling immediately within the Axis of the Eye. I cause this Fomentation to be repeated twice a Day for about fifteen Days, and the Shade to be continu'd in different Directions before the Axis of the Eye, till the Eye can perceive Objects in the ordinary Degrees of Light without Pain.

The Patient is to be continu'd for about twenty Days in the medicinal attenuating Diet, accompany'd with gentle Evacuations, as mention'd necessary to precede these Operations.

F I N I S.





## ADVERTISEMENT.

**I**N about two Months the Author of this Work will publish a new Treatise on the Anatomy, Supplies, and Uses of the several Parts of the Globe of a human Eye, with its Glands, Coverings, and lachrymal Canals.

To which will be added some Observations on that important Question, *viz.* Whether the *Choroides* or *Retina* is the immediate Organ of Sight?

This Work will be follow'd with all possible Expedition, by new Treatises on the Diseases of the immediate Organ of Sight, *Cornea*, *Uvea*, lachrymal Canals, and Eyelids.

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It is about two months the Author of this Work will publish a new Treatise on the Anatomy, Diseases, and Use of the Internal Organs of the Human Eye, with its Globes, Coverings, and Lachrymal Canals.

There is no doubt that the Government of India is the only authority which will be able to make any effective use of the information which is now being collected by the various departments of the Government of India.

The work will be followed with all possible expedition by new Treaties on the Affairs of the Immigrant Chinese and Japanese, and the